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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,549	04/14/2004	Yoichi Nakano	S003-5262	8840

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EXAMINER

SUTHAR, RISHI S

ART UNIT	PAPER NUMBER
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2851

DATE MAILED: 12/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/825,549

Applicant(s)

NAKANO ET AL.

Examiner

Rishi Suthar

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 November 2005 (election).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 11-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 110 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I (claims 1-10) in the reply filed on 11 November 2005 is acknowledged.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 5 recites the limitation that one or more sectors comprise a plurality of sectors. This is indefinite because one sector cannot comprise a plurality of sectors. Also, it is unclear exactly how the plurality of sectors can each have a sector arm connected thereto, which then drive the sectors to open and close the aperture.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 5 (as understood), 6 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi (U.S. Patent No. 6,536,962).

Per claim 1, Takahashi teaches in Fig. 3 a sector unit for a camera comprising a base plate (1) with an aperture (1a); sectors (31-35) for opening and closing the aperture; a sector driving unit comprising a support plate (11), an electromagnetic actuator (16) mounted to the support plate; and a driving force transmitting mechanism in Fig. 4 for transmitting a driving force of the actuator to the sectors, the sector drive unit being removably mounted as a unit to the base plate.

Per claim 2, Takahashi teaches a sector urging spring for urging the sectors in one direction (Col. 5, lines 52-54).

Per claim 3, Takahashi teaches a sector position detecting unit for detecting a position of the sectors based on a position of the drive force transmitting mechanism. (Col. 9, lines 26-29).

Per claim 5, Takahashi teaches a plurality of sectors each having a sector arm (29, 30) connected thereto, and the sector arms are driven by the actuator to open and close the aperture.

Per claim 6, Takahashi teaches in Fig. 4 the driving force transmitting mechanism has an angular motion converting mechanism for converting a prescribed amount of angular movement of the actuator (16) into an amount of angular movement sufficient to drive the sectors from an aperture open position to an aperture closing position and vice versa.

Per claim 10, Takahashi teaches the drive force transmitting mechanism comprises a drive gear (17) provided on a drive shaft of the actuator (Col. 6, lines 32-34), and a sector drive gear (18) for driving the sectors.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (U.S. Patent No. 6,536,962) in view of Tanikawa et al. (U.S. Patent No. 6,485,200).

Takahashi teaches the invention as claimed above, except where the sector position detecting unit comprises a spring element. Tanikawa et al. discloses in Fig. 1 focal plane shutter which has a sector position detecting unit (15) which comprise a conductive spring element having a portion that undergoes movement with the drive force transmitting mechanism to come into and out of contact with a conductive member (Col 4, lines 55-59). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify the shutter focal plane shutter of Takahashi to use the switch of Tanikawa et al. to detect a position of the sectors since the switches disclosed by Takahashi and Tanikawa et al. both perform the same function.

6. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (U.S. Patent No. 6,536,962) and Seo et al. (U.S. Patent No. 5,555,059) in view of Itoh et al. (U.S. Patent No. 4,306,164).

Takahashi teaches the invention as claimed above, as well as a stepping motor which can be used as a shutter drive source in the invention (Col. 6, lines 34-35). Takahashi does not disclose a pulse motor in his invention. Per claim 7, Seo et al. discloses a pulse motor that undergoes the prescribed amount of angular movement in response to pulses for opening and closing an aperture in a camera depending on the polarity of the pulses (Col. 4, lines 51-54). Per claim 8, Seo et al. also discloses in Fig. 6 a rotor (12) having a plurality of magnetic poles, a stator (50, 52) having a plurality of magnetic poles, and a drive coil for driving the rotor, and an angle of rotation of the rotor in response to one current pulse to the drive coil being defined by a relationship between the positions of the magnetic poles of the rotor and the stator. It is an inherent feature of the pulse motor that positions of the magnetic poles provided on the stator are static stable positions at which the rotor is retained without the supply of power to the drive coil, also known to as the residual or detent torque. Itoh et al. teaches that a pulse motor and a stepping motor can be used interchangeably (Col. 2, lines 22-24). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Takahashi to use a pulse motor as taught by Seo et al. in view of the teachings of Itoh et al. since a pulse motor and stepping motor can be used interchangeably.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kobayashi (U.S. Patent No. 5,117,137) discloses a shutter assembly for a camera that uses a stepping motor as a drive source.

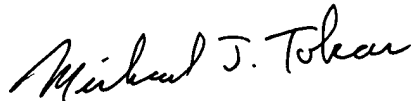
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rishi Suthar whose telephone number is 571-272-8456. The examiner can normally be reached on M-F 8:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Rishi Suthar
Examiner
Art Unit 2851

RS


Michael Tokar
Supervisory Patent Examiner
Technology Center 2800